grammatical errors, awkward syntax, and generally did not conform to standard U.S. practice. The substitute specification corrects these matters and will greatly facilitate prosecution of the application. Applicants submit that no new matter is injected into the application by way of the substitute specification. A marked-up copy of the originally filed specification is enclosed for the Examiner's reference.

IN THE CLAIMS

Please cancel Claim 1. Claims 2 through 32 were cancelled in a Preliminary Amendment filed on February 7, 2002. Please enter new claims 33 through 68 as follows:

What is claimed:

--33. A process for production of a disintegration roll for use in separation of fibers in an open-end apparatus, said process comprising the steps of:

converting a shredding element into a preparative configuration that corresponds to a finished configuration the shredding element assumes on the disintegration roll;

hardening at least a portion of the shredding element while it is in the preparative configuration; and

attaching the harden shredding element to a shredding element carrier of the disintegration roll.

34. A process as in claim 33, wherein the shredding element is preshaped around a preshaping body to be converted into the preparative configuration, the preshaping body having a circumference essentially corresponding to the circumference of the disintegration roll.

35. A process as in claim 34, wherein the shredding element remains on the

preshaping body during the hardening of at least a portion of the shredding element.

36. A process as in claim 35, wherein the preshaping body is the shredding element carrier.

37. A process as in claim 33, further comprising the step of grinding a working end of the shredding element which contacts the fibers.

38. A process as in claim 34, wherein the step of hardening the shredding element includes an induction procedure.

39. A process as in claim 38, wherein said induction procedure include use of a high frequency current.

40. A process as in claim 39, wherein the step of hardening of the shredding element includes providing an alternating current to a working area of the shredding element at a frequency of more than 1000 kHz.

41. A process as in claim 40, wherein the alternating current is in a frequency ranging between 1500 to 2000 kHz.

42. A process as in claim 33, wherein the step of hardening the shredding element is performed in a protective gas.

43. A process as in claim 33, further comprising a step of heat treating the shredding element after hardening to relieve stress in the shredding element.

44. A process as in claim 33, further comprising a step of blasting the shredding element with a particle blast after hardening.

45. A process as in claim 44, wherein the particle of the particle blast uses glass as the particle.

46. A process as in claim 44, further comprising a step of demagnetizing the

shredding element.

47. A process as in claim 33, further comprising a step of deburring the shredding element.

48. A process as in claim 47, wherein the shredding element is deburred by a chemical.

49. A process as in claim 33, further comprising a step of coating the shredding element.

50. A process as in claim 49, wherein the shredding element is coated with a nickel-plating.

51. A process as in claim 37, wherein the grinding occurs on teeth points of the shredding element.

52. A process as in claim 51, wherein the teeth points of the shredding element are subject to a grinding in a direction counter to the operational direction of the teeth points of the shredding element.

53. A process as in claim 52, wherein the shredding element integral to the shredding element carrier is rotated in an opposite direction of rotation of a grinding disk used to grind the shredding element.

54. A process as in claim 52, wherein the shredding element undergoes no pre-hardening procedure before it is shaped.

55. A process as in claim 33, wherein the shredding element carrier is created from a non-hardening material.

56. A process as in claim 55, wherein the shredding element carrier is created from a low carbon steel.

57. A process as in claim 49, wherein the shredding element is plasma coated.

58. A process as in claim 57, wherein the plasma coating includes titanium nitride.

59. A process as in claim 33, wherein the shredding element is a sawtooth wire.

60. A disintegration roll for use in separation of fibers in an open-end apparatus, said disintegration roll comprising:

a shredding element carrier having an outer circumference; and

a shredding element operably mounted to said outer circumference of said shredding element carrier, said shredding element being pre-shaped to conform to said outer circumference of said shredding element carrier and at least partially hardened in this pre-shaped form.

61. A disintegration roll as in claim 60, wherein said shredding element is hardened by an induction procedure.

62. A disintegration roll as in claim 60, wherein the shredding element is coated with a nickel-plating.

63. A disintegration roll as in claim 60, wherein the shredding element undergoes no pre-hardening procedure before it is shaped.

64. A disintegration roll as in claim 60, wherein the shredding element carrier is created from a non-hardening material.

65. A disintegration roll as in claim 64, wherein said shredding element is pre-shaped on the shredding carrier element and hardened on said shredding element carrier.

66. A disintegration roll as in claim 60, wherein the shredding element is plasma coated.

67. A disintegration roll as in claim 66, wherein the plasma coating includes titanium nitride.

68. A disintegration roll as in claim 60, wherein the shredding element is a sawtooth wire.--

REMARKS

The present amendment will greatly facilitate prosecution of the application. The new claims more distinctly set forth and claim the invention.

Respectfully submitted,

DORITY & MANNING, P.A.

By: _____

Stephen E. Bondura
Reg. No. 35,070
P.O. Box 1449
Greenville, SC 29602-1449
(864) 271-1592
FAX (864) 233-7342

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